

Research Title	The Participation of the Community to Protect Against the Great Flood: A Case Study of Nonthaburi and Pak Kert Municipality, Nonthaburi Province
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The objectives of this research were to study and compare the community's participation in protecting against the great flood of 2011 in the Nonthaburi and Pak Kret municipalities in Nonthaburi province, as well as to examine flood control management of public and private organizations. A mixed method research design was employed to collect both quantitative and qualitative data. The population and sample in this research covered the areas of five different sub-districts in Nonthaburi municipality and five different sub-districts in Pak Kret municipality, including a total of 115,894 households from Suan Yai, TaladKhwana, Bang Khen, Bang Krasor, and Tasai sub-districts in Nonthaburi municipality and a total of 80,000 households from Pak Kret, Bang Pood, Bang Talad, KhlongKleua, and Ban Mai sub-districts in Pak Kret municipality. There were a total of 195,894 households involved in this study. The sample size of 400 households was chosen after applying the Taro Yamane formula with a confidence level of 95 percent and a probability of error at 5 percent. The sample was randomly selected based on the proportion of households in each sub-districts. The key informants were twenty people who included administrative policy makers in public and private sectors, government officials, local politicians, community leaders, and experts in water management in public and private sectors (both in and out of the areas). The research instrument included a questionnaire. The questionnaire was used to collect quantitative data. The statistics used to analyze the data were frequency and percentage. Mean and standard deviation were used to

analyze the community's participation in protecting against the great flood. In-depth interviews were used to collect qualitative data, of which the content was analyzed.

The results were as follows:

1. Community participation was found to be at a high level in every aspect which included the aspects of finding problems and their causes, activity planning, follow-up/evaluation and investment, participation, and practice, respectively. The highest scoring issues of each aspect were on perceptions of information about the great flood situation, the provision of useful information for protection against the great flood, participation in packing sand bags for flood protection, and follow-up with public and private sectors in areas relevant to protection against the great flood.

2. Regarding community participation in protecting against the great flood, it was found that people from different types of households located in different municipalities and sub-districts had similar levels of participation. Whereas people from households in communities that had different status and topography levels participated in protecting against the great flood differently at significance levels of .05 and .001, respectively.

3. Concerning flood control management of public and private organizations in the areas of Nonthaburi and Pak Kret municipalities, five scopes of flood control management were found: 1) preparation for protection against the great flood, 2) flood control and disaster management, 3) management of community participation, 4) relief and rehabilitation of flood victims, and 5) guidelines on future protection against a great flood.

The details of the first scope included preparation of planning; flood protection equipment and materials; annual budget and personnel; follow-up news of the flood situation from informed sources; meeting to find working guidelines and making clarifications to relevant sections; good planning for flood protection; survey of areas for studying and finding flood risk areas; finding collaboration and support from every sector; as well as communication through various and effective channels.

The second scope concerned collaborative management; administrating

infrastructure and city structure systems that support protection against great floods; strong leaders; establishment of a collaboration and help center; developing quick and universal assistance; collaboration coordination from public and private sectors; effective and efficient communication; community cooperation and devotion; network management; establishment of a flood mitigation and administration center; and continuous evaluation of situation and information checking.

The third scope included collaborative management; the use of communication channels for distributing information and inviting participation; the use of positive motivation; people's awareness of a situation; using effective communication to encourage people to participate in flood management ; the use of local community leaders; and participation management through networks.

The details of the fourth scope were rapid drainage in the flood areas; providing facts and increasing understanding; waste disposal and cleaning; survey of flood areas in the community to follow-up with the flood recovery fund; survey of flood areas and clarification of additional recovery funds; budget allocation in the flood areas; improving victim morale; budget support from organizations outside the areas; local budget allocation; and providing various services.

The fifth scope concerned the survey of flood areas to determine the causes of protection failure; digging canals; floodgate construction and repair; operation of water pumps and water jets, as well as the establishment of pumping stations; the operation of levees; the building of permanent and temporary dams; public relations through various kinds of media to distribute news and increase awareness of flooding; collaboration on a local level; building and expansion of drains; administration of community participation and suggestions about guidelines for future flood protection, such as continuous and serious support and government supervision towards flood situations in the future.